Field Test

Minelab Explorer XS

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Due to serious health problems I have been out of commission, so far as metal detecting is concerned, for several years. To be given the opportunity to field test the Minelab Explorer XS was therefore a very nice welcome-back to the hobby. The reason I say this, is because the Explorer is a "serious piece of kit" and I knew that it would be a challenge for me to put it through it paces, and see what it could really do.

What came as a great surprise to me is that although the Explorer is an apparently complex detector, it can be used as a simple "switch on and go" machine. This can be achieved simply by using the factory-preset program. The only adjustment that needs to be made is to tweak the threshold down a notch or two.

A further surprise was that the factory settings are excellent, particularly for beach work. In fact, this is the only detector I have handled that seems to penetrate the ground to a greater depth than can be achieved when carrying out "in air" tests. I will tell you more about the amazing performance of the Explorer later, but would first like to make a few comments about the hardware.

My first impression when I opened the box was of the detector's excellent build quality. It is true that I later encountered a few little niggles, but then nothing is perfect. The layout is of the style that has become the norm in recent years with regards to the S-shape, the ever-decreasing control box size, and the large search coil.

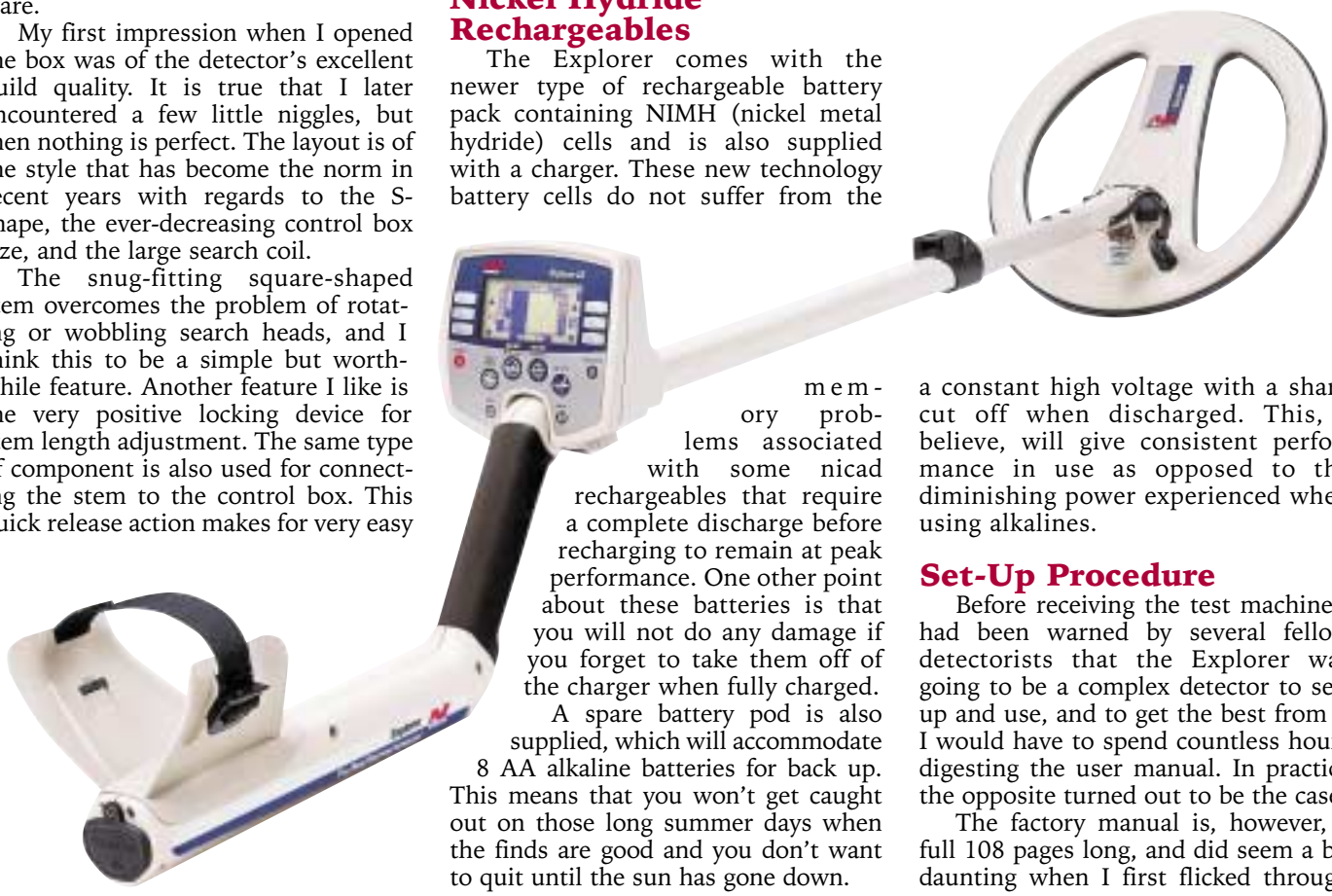
The snug-fitting square-shaped stem overcomes the problem of rotating or wobbling search heads, and I think this to be a simple but worthwhile feature. Another feature I like is the very positive locking device for stem length adjustment. The same type of component is also used for connecting the stem to the control box. This quick release action makes for very easy breakdown, and allows the whole machine to fit into the average sports bag. With the Explorer there is no more messing around with button locks or screw collars that don't grip the lower stem when they become a little worn. To adjust the stem you just pull down the heavy duty nylon catch, set the stem to the desired length, and lock the catch in place once more by pushing the leaver up parallel to the stem. One point I particularly liked was the location of the slim battery pack within the upper stem.

The cable that connects the search head to the control box is rather novel. The lower section is straight and fits into a slot at the back of the lower stem, while the upper part is coiled and fed inside the top stem section. This feature eliminates the chances of the cable getting snagged when you are working amongst scrub and bushes (which can be a real annoyance).

Nickel Hydride Rechargeables

The Explorer comes with the newer type of rechargeable battery pack containing NIMH (nickel metal hydride) cells and is also supplied with a charger. These new technology battery cells do not suffer from the memory problems associated with some nicad rechargeables that require a complete discharge before recharging to remain at peak performance. One other point about these batteries is that you will not do any damage if you forget to take them off of the charger when fully charged.

A spare battery pod is also supplied, which will accommodate 8 AA alkaline batteries for back up. This means that you won't get caught out on those long summer days when the finds are good and you don't want to quit until the sun has gone down.



The in-car cigarette lighter charger included is another very useful extra. In fact, the one supplied is similar in appearance to the one that came with my mobile phone.

The charging process is lengthy, taking something in the region of 16 hours to bring the batteries from being completely flat up to full charge. A back up set of alkalines could therefore be a wise investment. Minelab gives an approximate battery life of 11 hours for the rechargeable NIMH cells, and 14 hours for alkaline batteries. There is one other point to bear in mind, and that is that it takes several charges and discharges to bring the NIMH battery pack up to its full capacity from new.

Another point worthy of mention, before I move on from the subject of batteries, is the power curve or discharge characteristics. The graph on page 92 of the Explorer's handbook clearly shows the difference between the NIMH battery and the alkaline battery. Although the alkaline lasts a few hours longer its voltage drops constantly throughout use. The NIMH shows a small drop in voltage initially, but then flattens out to give a constant high voltage with a sharp cut off when discharged. This, I believe, will give consistent performance in use as opposed to the diminishing power experienced when using alkalines.

Set-Up Procedure

Before receiving the test machine I had been warned by several fellow detectorists that the Explorer was going to be a complex detector to set-up and use, and to get the best from it I would have to spend countless hours digesting the user manual. In practice the opposite turned out to be the case.

The factory manual is, however, a full 108 pages long, and did seem a bit daunting when I first flicked through

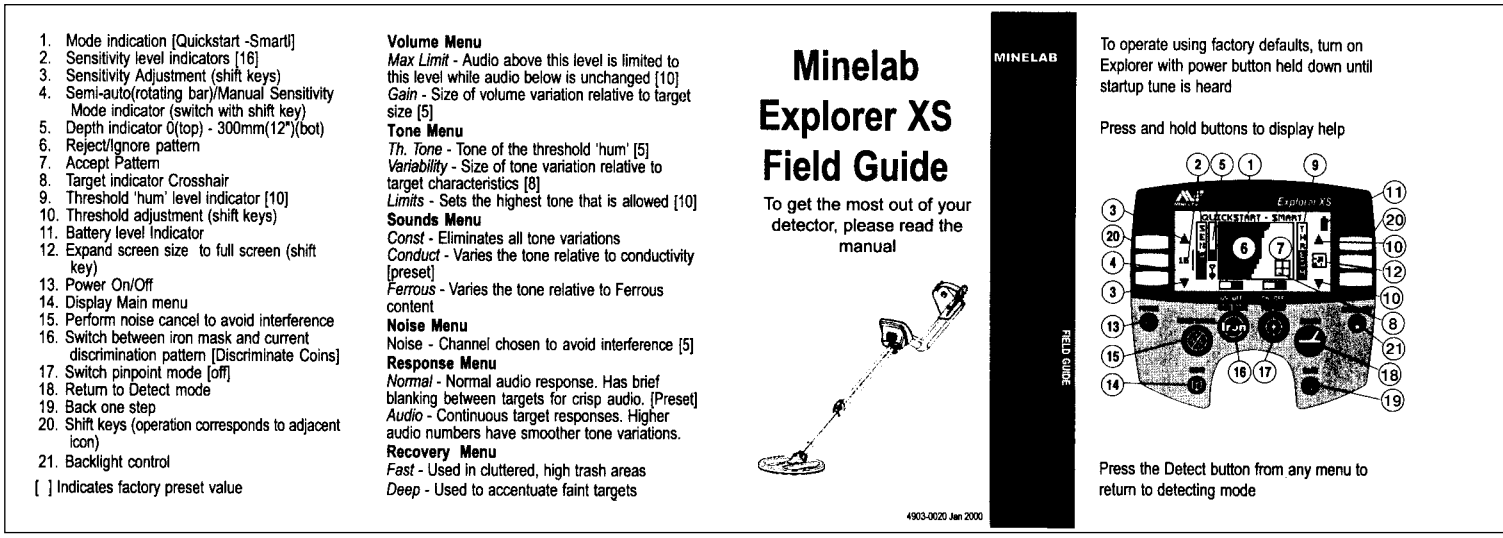

1. Mode indication [Quickstart -SmartI]
2. Sensitivity level indicators [16]
3. Sensitivity Adjustment (shift keys)
4. Semi-auto(rotating bar)/Manual Sensitivity Mode indicator (switch with shift key)
5. Depth indicator 0(top) - 300mm(12")(bot)
6. Reject/Ignore pattern
7. Accept Pattern
8. Target indicator Crosshair
9. Threshold 'hum' level indicator [10]
10. Threshold adjustment (shift keys)
11. Battery level Indicator
12. Expand screen size to full screen (shift key)
13. Power On/Off
14. Display Main menu
15. Perform noise cancel to avoid interference
16. Switch between iron mask and current discrimination pattern [Discriminate Coins]
17. Switch pinpoint mode [off]
18. Return to Detect mode
19. Back one step
20. Shift keys (operation corresponds to adjacent icon)
21. Backlight control
[ ] Indicates factory preset value
Volume Menu
Max Limit - Audio above this level is limited to this level while audio below is unchanged [10]
Gain - Size of volume variation relative to target size [5]
Tone Menu
Th. Tone - Tone of the threshold 'hum' [5]
Variability - Size of tone variation relative to target characteristics [8]
Limits - Sets the highest tone that is allowed [10]
Sounds Menu
Const - Eliminates all tone variations
Conduct - Varies the tone relative to conductivity [preset]
Ferrous - Varies the tone relative to Ferrous content
Noise Menu
Noise - Channel chosen to avoid interference [5]
Response Menu
Normal - Normal audio response. Has brief blanking between targets for crisp audio. [Preset]
Audio - Continuous target responses. Higher audio numbers have smoother tone variations.
Recovery Menu
Fast - Used in cluttered, high trash areas
Deep - Used to accentuate faint targets
Minelab Explorer XS Field Guide
To get the most out of your detector, please read the manual
4903-0020 Jan 2000
MINELAB
FIELD GUIDE
To operate using factory defaults, turn on Explorer with power button held down until startup tune is heard
Press and hold buttons to display help
Press the Detect button from any menu to return to detecting mode

Fig.1. Field Guide

its pages. With the Explorer assembled, the batteries fitted, and everything tested and working, I settled down to try and digest the bulk of the manual. Many readers will know how it is when you try to cram too much information in your head at one session; it often gets to the point of a mental logjam. At such times, as I know from experience, it is time to quit the studying and get out for some hands on detecting. I always find that the advanced settings of a complicated detector are far easier to digest when I have a comfortable handle on the basics.

The following afternoon the sun was shining, and as the holiday season doesn't get into full swing for a few weeks yet where I live, it was down to my local beach for some real hands on experience. The nearest beach to my home in South Devon is Exmouth.

Upon arrival I noticed that there were very few people on the beach. This meant that I would have a couple of miles of beach to myself without having to worry about upsetting the summer visitors.

After only a few minutes detecting I realised that I was probably wasting my time. A good 2ft of sand, that on my last visit had been either ripped away by winter storms or blown up onto the coast road, had now been replaced. I remembered there was a good 2ft drop from the concrete to the top of the beach just a few months ago, but now it was reduced to a few inches.

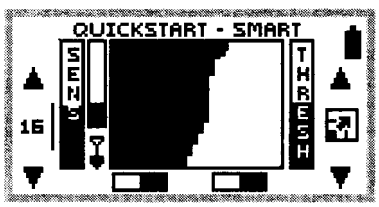
However, I am not easily put off and decided to give the beach at least a few hours. There is one handy little extra that comes with the Explorer, which I forgot to mention earlier. This is a comprehensive instruction field guide. The field guide folds down to about 3.5in by 2.5in and is plastic coated, so it should last some time. This guide contains all the setting-up procedures and diagrams. At a glance you are reminded of everything you need to know when in the field (see Fig.1.).

Performance

When undertaking this field test there were certain questions I set out to answer, including: How does the Explorer XS perform? What's different about it? What's good about it?

As a starting point I would like to say that, in my opinion, the Explorer offers the most comprehensive array of discrimination options of any detector built to date. When it comes to discrimination, it is in "all the sizes and all the colours".

Minelab recommend that you spend some time in getting used to the factory preset quick start options before delving too deeply into the myriad of set-up variables. After just an hour of detecting I realised that it was not necessary



for me to have spent so much time reading the manual. It doesn't matter how you set it up, the Explorer is very forgiving and almost always gives a good account of itself.

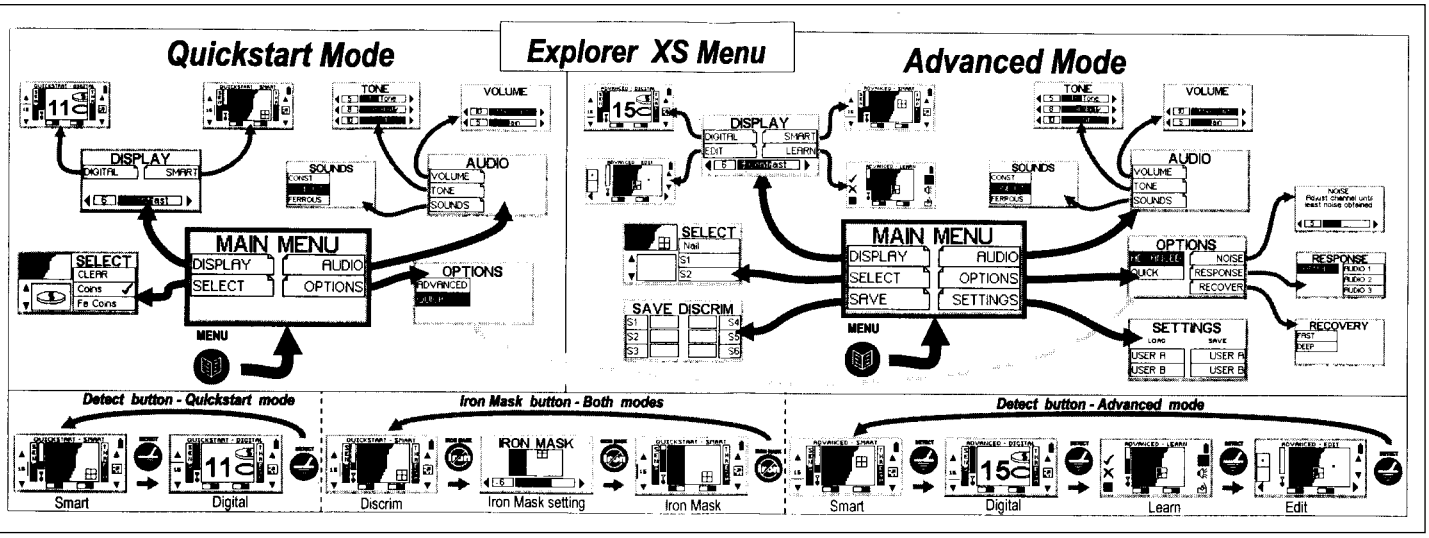
When using the quick start option, the LCD display defaults to Quick Start Smart Display. In the middle of the generously sized LCD display is a large rectangle, which acts as a discrimination chart or map. The blacked out area signifies the preset iron reject; if a target falls within that area it is obviously rejected. The rest of the screen is a two-dimensional target ID. The horizontal axis (left to right) denotes the target's iron content. The vertical axis (up and down the screen) represents the target's size and conductivity. Cross hairs, similar to those of a telescopic gun sight, move around the screen and lock in position for the last target. A good non-ferrous target will register to the right, and the more conductive the target then the higher up the cross hairs. Also, the larger the target the higher up the cross hairs appear on the screen.

The more technically minded of you may have picked up on the fact that the vertical axis denotes both target size and conductivity. So how do you separate a large iron object from a more conductive alloy? There is a simple answer, which is that the Explorer also discriminates with a whole range of different tones for different metals. For example, a large iron target or a good conductor such as a copper coin may place the cross hairs in about the same place on the display. The copper coin, however, will give a high-pitched tone while the iron will give a very low note.

I would just like to give you a quick run through of the rest of the quick start options, then I'll go on to some in-the-field results. To the left of the screen there are two vertical bars; the inner represents target depth, and has a small icon of a spade below. The outer on the far left is the sensitivity meter, and is set by the three buttons on the left. The top and bottom buttons' functions are obviously for turning the sensitivity up or down. The centre button is for switching between semi auto sensitivity and manual set-up.

From my experience so far, I have found the semi auto to be the best general-purpose setting. When set to semi auto a straight line blinks like a computer cursor as it rotates around the sensitivity number on the far left.

Coming to the right of the screen there is a vertical bar meter for setting



the threshold volume. This is set by the upper and lower buttons on the right. The symbol at the centre of the far right denotes the option to switch the centre rectangle between standard screen and full screen (and back). The centre right button controls this function. The upper right battery icon goes white from the top as the battery discharges.

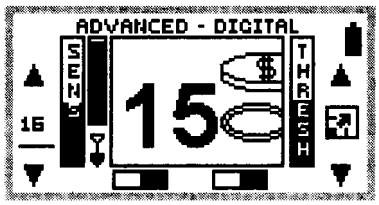
Having gone through the quick start display I found that, as useful as it may seem, the only adjustment necessary to get great performance from this detector was to turn down the threshold a few points when first switching on. When you switch off the Explorer it retains any custom settings to memory for the next time you switch on. If you want to revert to the factory presets when switching on, just hold down the on/off push pad for about 30 seconds. The detector will then emit a series of tones indicating that you are back to the factory quick start smart settings.

For the advanced user there is the option of saving up to six different user discrimination programs. These settings can be saved permanently to file.

I spent most of my time searching along the water's edge at Exmouth because the overburden of fresh sand was not in evidence there. Although I have just spent some time outlining the basics of the quick start menu, if you do no more than switch on and search (ignoring the display and just relying on the audio discrimination) you will be amazed at the accuracy of this machine. Just dig all the high and medium tones, while ignoring the low notes, and you will be able to cover the ground very rapidly while knowing that the target ID is probably the best available for beach use. As you may have guessed after my comments about the deep sand that had been freshly deposited, I found that targets, of whatever description, were few in number.

How do I know the audio discrimination is that good? Well, I went through the laborious process of recovering every target for the first couple of hours. Once confident that the discrimination was reliable, I allowed the machine to do the target analysis. The only target that fooled the Minelab was a shallowly buried steel ring over a foot in diameter, and the detector has yet to be built that would have been able to successfully reject this.

As stated earlier, my search was first focused on and around the water line. The first two hours were spent recovering the following array of finds, all of which were dug regardless of whether the Explorer indicated them to be junk: three or four pull tabs and several pieces of pull tabs; an assortment of pieces from drink cans; two 1p coins; a 2p coin; and several pieces of boat nails. I was very impressed at the Explorer's



sensitivity to small fragments of metal. This sensitivity to small targets was surprising for such a large coil.

After this initial couple of hours I felt comfortable with the tone discrimination, so I moved up to the back of the beach to search near some sand dunes. At this location the sand was very dry to a depth of about 4 or 5in. This was something of a nuisance as it ran into the holes I dug immediately, much as if it had been a fluid. The one thing I had forgotten to bring, was my hand sand scoop.

As I had anticipated, finds were once again sparse. I only recovered a few cupro-nickel coins and several metal fragments in the next hour and a half. However, it was on this patch of beach where this machine really began to show its true colours. Targets were consistently being detected at depths on or beyond the air test range. Several times in the 30 years I have been involved in this hobby, I have heard other detector users comment that such and such machine had the ability to detect deeper in the ground than in the air. I personally, however, have never come across such a detector. Or rather that is until now. The Explorer definitely does do this on the beach. Unfortunately, I was unable to test this point inland because the only farmland sites I had available that were not under crop, were very rocky with only an inch or two of topsoil.

Although I feel it my task in the first instant to appraise the performance of a detector and disregard the actual value or interest of individual finds, I do tend to get a little disheartened when recovering just dross. After my stint at the top of the beach, I decided to stop for a coffee break at a seafront cafe. Once refreshed, I thought I would give it another hour or so and then call it a day.

For this I chose another location that was several hundred yards further along the beach from where I had been searching. The area was once more near the water line and by a flat rocky outcrop, which I believe is called Maer Rocks. There was black sand evident where the beach just covers the flat shelving rocks. This is not the most detector friendly environment, but I had recovered some nice finds from here a few years ago. The first target to come up was an end from a coke can, swiftly followed by another. Then came a 1p piece and an improvement in my finds in the form of a man's silver ring with a flat oval stone. This ring was detected at about 5in down in black sand, and gave a good signal.

Pinpointing

One point I have neglected to mention is that the Explorer is not always good at pinpointing in the discrimination mode. I say "not always good" for it seems excellent on copper coins and pound coins, but not so efficient on others. However, just hit the pinpoint push pad and this puts the detector into the all-metal pinpoint mode, which provides very good pinpointing. The exception to this is when targets are at the limit of the Explorer's detection depth, and the ground conditions cause a depth reduction when non-motion all-metal pinpoint is used. On such occasions you just have to dig deeper and wider holes to get the search head nearer to the target. When in pinpoint mode a small black and white bar flashes at the lower right hand side of the display. Press pinpoint once more, and the Explorer returns to its smart screen.

I have made the forgoing as simple as possible to demonstrate that the Explorer performs well without complex setting up. If, when using the quick start option, you press the detect push pad (signified by a search head icon) the display changes to digital mode. In digital mode each target causes its own ID number to appear on the display and an accompanying probable target icon (eg ring, coin, foil etc). You push the pad once again to return to the smart screen.

To conclude my session on the beach I spent the last half hour recovering a couple of fishing weights and some aluminium dross. As so often happens, just as you are about to pack up and call it a day, you get that last signal that turns out to be the best so far. This outing was to prove no exception.

To retrieve a signal I went to dig down into the sand, but found it was only a few inches deep above the bedrock. I therefore scraped the sand off of the flat rocks towards the water, expecting my find to be amongst the sand. This proved not to be the case, so I cleared a large area of rock and ran the search head over it once more. The Explorer gave the same audio response. The rocks in this area consist of soft red sandstone laid out in distinctive layers with a multitude of cracks. In the past I have recovered a number of finds from in amongst or under the rocks in this area, but for the most part they had been fishing weights. I levered at two cracks at a point in the rocks where I anticipated the target would be directly under, bending my digging tool in the process. I was about to give up when a slab of rock gave way. In the small gully exposed I found a thin section man's gold ring. As is normal in such cases, I now had to decide whether to carry on detecting for another hour or to quit while I was ahead. As I had already been out for some hours, on this occasion I decided on the latter course of action. I live near to the coast, and there would always be another day.

Other Finds

I am already almost reaching the limit of words I have been allowed for this test, so I will briefly run through some of the other interesting finds I recovered while testing the Minelab Explorer. Over the test period I spent several days working three South Devon beaches. Unfortunately, I was too early for this seasons crop of holiday makers' loses and, as stated earlier, too late for the finds exposed by last winter's storms. Except for a small silver St. Christopher my finds were restricted to modern decimal coins and ammunition. Although I have recovered countless thousands of spent rounds in the past, the large bronze rounds recovered from one beach are of a type that constitutes a first for me (see illustration). As can be seen in the photograph, all of these rounds were encased in a ball of concretion. The bullets themselves are not as interesting as the depth from which some of them were recovered. Although larger than average as bullets go, their shape and size does not present the best target for a detector. However, several of these were recovered from approximately 14in in depth. The particular area of beach in question gets worked by many detector users, so why were these large finds still available in quantity? Also, they were all found in close proximity (ie on a 20yd stretch of beach).

If you are thinking of buying an Explorer, be prepared to dig some very deep holes as several targets I recovered were at or below 20in in depth. These deep targets showed as rust stains at the depth just stated so I didn't bother to recover them. But as an afterthought, at least two gave a high-pitched discrimination tone. I am now wondering what else may have been down there besides the iron.

I also used the Explorer on two inland sites; one was a wooded hillside, the other a small meadow. The finds I recovered from these two sites included a number of pre-decimal coins dating back to George III, a few lead bullets and musket balls, a silver man's ring with a black stone, and an interesting silver-plated copper brooch/tie pin with a large blue stone. Most of these finds were made within 6in of the surface as on the field concerned there was only a thin covering of soil with broken rocks beneath. The rocky sub-layer undoubtedly stopped the items from settling deeper. Once again, however, these two sites were ones I considered all but worked out.

Likes & Dislikes

As stated earlier, I did encounter one or two "niggles" during my field testing. The most noticeable minus factor is that the detector does not quite balance right. While it is nice to have a large 10in search coil for rapid ground coverage, the search head of the Explorer is just a bit too heavy to put the machine's centre of gravity in the right place. In weight, the Explorer - compared to other detectors on the market - comes in about mid-scale. However, it feels heavier than it actually is because of this balance problem. It only takes a few extra ounces on the search head, and the torque effect of the long stem to multiply the excess weight, for this to happen.

The detector provided for test came

Searching near a mobile jetty.

Finds made during field test

with a scuff guard for the search head and a rather large plastic bracket that also fits on the coil. This bracket is to stop the detector from rolling over when it is placed on the ground while recovering finds. Although the scuff guard is a necessary evil, the large plastic bracket is not. Once I had discarded it there was a marked improvement in balance. If a stand were fitted under the upper stem, perhaps a little heavier than the coil bracket supplied, I am sure it would eliminate the balance problem. In all probability, with the weight of the anti-roll bracket and scuff guard removed, I would not have even noticed the balance problem.

One other minor point that lets this detector down is, in my opinion, its inadequate eighth of an inch jackplug socket. I would have preferred to have seen the standard quarter of an inch socket fitted. If this had been the case, a far greater range of the special heavy-duty, high performance headphones could have been used without the need for an adapter. This small socket may have been fitted for reasons of space restrictions in the upper stem. But if such were the situation, perhaps it would have been better to position a quarter inch socket elsewhere on the detector.

In context of what the Explorer otherwise has to offer, I would class the above minus points as annoyances rather than problems, and neither would personally prevent me from buying or using this detector.

On the positive side, from my recent experiences of using it, I would say that the Minelab Explorer XS is an excellent performer on the beach (on dry or wet sand) and offers the most comprehensive array of discrimination options of any detector I have used to date. There is not enough space in just one article to cover the diverse options of discrimination available, but I intend to cover these in depth in some further articles in the near future.

I anticipate the Explorer's performance to be equally as good on inland sites as on the beach. However, at this point in time I cannot state that as a fact due to the rocky ground conditions described earlier. Once again, a full report on this aspect of the detector's use will have to wait for a future article.

My intention in this initial test was not to go into great technical detail about the set-up features available on the Explorer. Instead, I have kept this test simple and have tried to show that it is possible to start using the detector with good effect almost immediately. However, just to give a few examples of the other discrimination options on the Explorer: you can teach it to learn specific targets; and it can be programmed to respond to a single target type (or several can be set to multi tone disc or one tone). The digital display gives specific numbers and icons for each target type, and much, much more.... all of which I will explain next time. TH